# Debaleen Das Spandan

debaleen0010@missouristate.edu — +1 (417) 225-0199 — Springfield, Missouri, USA
Google Scholar — LinkedIn — GitHub

## Education

**Missouri State University**, Springfield, MO — *Aug 2022 – Jul 2024*
Master of Science in Computer Science — GPA: 4.0/4.0
Graduate Assistant
Thesis: *Scene Understanding and Spatial Analysis Using Scene Graph Enhanced by Hall's Proxemics Zones in Smart Homes*

**Bengal College of Engineering and Technology**, India — *2017 – 2021*
Bachelor of Technology in Computer Science and Engineering — GPA: 8.94/10.0 (3.68/4.0)

## Professional Experience

**Android Developer**, Digital Monitoring Products — *Aug 2024 – Present*

- Delivered multiple enterprise-level projects in Android app with consistently low bug counts, cutting technical debt by 30% through removal of legacy dependencies and implementation of reusable, modular architecture.
- Designed and integrated abstraction layers for Android app to integrate WebRTC technologies, reducing development time and streamlining integration for future features.
- Took ownership of complex, undefined initiatives, proactively researching new tools and products, identifying design flaws, implementing improvements, and aligning solutions with product management priorities.
- Accurately estimated and delivered high-priority Android development work within tight deadlines, standardized architectures across features, and coordinated timely Google Play Store releases to maintain delivery schedules.

**Graduate Research Assistant (UDE CODERS Project & NSF - RET: ROSE Grant)**
Missouri State University — *Jun 2023 – Aug 2023; Jun 2024 - Jul 2024*

- Tutored and guided high school teachers on networks and IoT security vulnerabilities, including Wireshark packet capturing, aircrack-ng suite, nmap, Wi-Fi phishing, wifite, WPS vulnerability, Pixie Dust attack, social engineering issues, and password vulnerabilities.
- Provided training on network sniffing, network device discovery, and OSINT for data gathering to prevent cyberattacks.
- Co-created interactive workshop activities on programmable drones, robot dogs, and robots with sensors.
- Facilitated lesson plan creation integrating research methodologies and CS principles for the ROSE project.

**Graduate Assistant (Computer Science Department)**
Missouri State University — *Aug 2022 – Jul 2024*

- Guided Python, C, and C++ lab sessions, teaching programming fundamentals and advanced algorithms.
- Evaluated assignments in DBMS, Computer Security, OS, Algorithms, and Data Structures.
- Held office hours to troubleshoot code, answer questions, and explain complex CS concepts.

**Research Engineer**
National Institute of Technology Durgapur *Jun 2022 – Jul 2022*

- Conducted research and development of a multi-modal interface designed to assist individuals with disabilities, integrating both audio and visual inputs for enhanced accessibility.
- Designed and implemented interface prototypes using JavaScript, React.js, Node.js, TensorFlow.js, and Python; the initial prototype contributed to securing funding from an industry investor.
- Mentored a team of four in research methodologies, programming practices, and coding techniques to support ongoing project development.

**Programmer Analyst Trainee & Intern**, Cognizant *Jan 2021 – Jun 2022*

- Revamped configuration management, reducing cloud costs; integrated ETL processes using AWS and Python, optimizing workflow efficiency and delivered impactful solutions from ideation to release in finance & supply-chain domains.
- Completed ASP.NET full-stack training, ranking top in cohort; developed e-commerce website using ASP.NET Core MVC.

**Research Intern**
National Institute of Technology Durgapur *Feb 2020 – Aug 2020*

- Built data preprocessing and analysis modules for an ML project using Python, Matplotlib, NumPy, Pandas, and Scikit-Learn.
- Created visualization tools to represent processed data using Python and JavaScript.

## Publications & Theses

1. *ProxeGraph: Scene Graph Generation Utilizing Proxemics for Smart Homes*.
   **Debaleen Das Spandan**, Razib Iqbal. IEEE MIPR 2024. Link
2. *Metamorphic Testing for Investigation of Context Recognition from Smart Home Voice Commands*.
   Fahima Hasan Athina, Jeniya Sultana, **Debaleen Das Spandan**, Razib Iqbal. IEEE CIoT 2024. Link
3. *To Hack or Not to Hack? Connecting Cybersecurity, the IoT, and Smart Environments to K12 Learning Experiences*.
   Shusmoy Chowdhury, **Debaleen Das Spandan**, Tara Bonebrake, Zachary Frantsen, Ajay Katangur. CSCE 2024.Link
4. *Exploiting Multi-modal Contextual Sensing for City-bus's Stay Location Characterization*.
   Ratna Mandal, Prasenjit Karmakar, Soumyajit Chatterjee, **Debaleen Das Spandan**, Shouvit Pradhan, Sujoy Saha, Sandip Chakraborty, Subrata Nandi. ACM TIoT 2023. Link
5. *Can I Take Class in that Classroom Now? In the Perspective of Air Quality*.
   Praveen Kumar Sharma, Debjit Chatterjee, **Debaleen Das Spandan**, Sujoy Saha. ICDCN 2023. Link
6. *Scene Understanding and Spatial Analysis Using Scene Graph Enhanced by Hall's Proxemics Zones in Smart Homes*.
   **Debaleen Das Spandan**. Master's Thesis, Missouri State University, 2024. Link

## Key Skills

**ML/CV:** PyTorch, TensorFlow, CNNs **Data:** Python, Pandas, NumPy, scikit-learn, Matplotlib
**Security:** Wireshark, OSINT, Linux, Nmap **Mobile:** Kotlin, Java, Android SDK